Volunteer Lake Assessment Program Individual Lake Reports

MAY POND, WASHINGTON, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	3,776	**Max. Depth (m):**	7.6	**Flushing Rate (yr^{-1})**	11.1
Surface Area (Ac.):	149	**Mean Depth (m):**	1.4	**P Retention Coef:**	0.5
Shore Length (m):	5,300	**Volume (m^3):**	905,000	**Elevation (ft):**	1603

TROPHIC CLASSIFICATION

Year	Trophic class
1984	MESOTROPHIC
2004	MESOTROPHIC

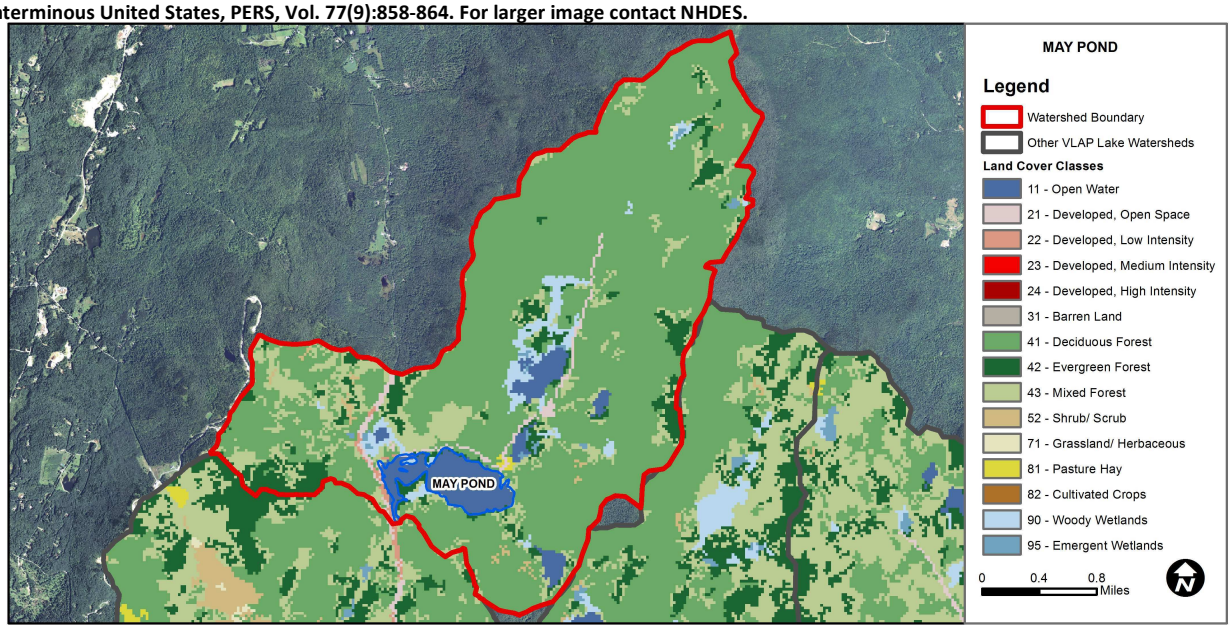
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	The calculated median is from 5 or more samples and is < indicator and > 1/2 indicator and the chlorophyll a indicator is okay.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	Oxygen, Dissolved	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Dissolved oxygen satura	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Chlorophyll-a	Good	The calculated median is from 5 or more samples and is < indicator and > 1/2 indicator.
Primary Contact Recreation	Escherichia coli	Very Good	Where there are no geometric means, all bacteria samples are < 75% of the geometric mean. Where there are geometric means all single bacteria samples are < the SSMC and all geometric means are < geometric mean criteria.
	Chlorophyll-a	Very Good	There are a total of at least 10 samples with 0 exceedances of indicator.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	5.69	Barren Land	0	Grassland/Herbaceous	0.04
Developed-Open Space	1.34	Deciduous Forest	70.59	Pasture Hay	0.1
Developed-Low Intensity	0.26	Evergreen Forest	6.74	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	11.23	Woody Wetlands	2.87
Developed-High Intensity	0	Shrub-Scrub	0.44	Emergent Wetlands	0.4

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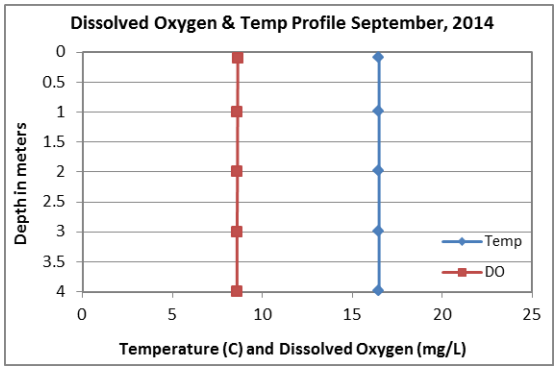
May Pond, Washington

2014 Data Summary

Observations and Recommendations (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **Chlorophyll-a:** Chlorophyll levels were slightly above average in September and historical trend analysis indicates significantly increasing (worsening) chlorophyll levels since monitoring began.
- **Conductivity/Chloride:** Epilimnetic (upper water layer) and tributary conductivity levels were low and much less than the state median. Historical trend analysis indicates significantly decreasing (improving) epilimnetic conductivity since monitoring began. This trend has also occurred at other area lakes.
- **Total Phosphorus:** Epilimnetic phosphorus levels were slightly elevated for May Pond yet remained less than the state median. Historical trend analysis indicates highly variable epilimnetic phosphorus levels since monitoring began. Butterfield Outlet, Mill Pd. Inlet and Outlet phosphorus levels were low in September. Vickery Pd. Inlet phosphorus levels were slightly higher and turbidity was also slightly higher likely due to low flow conditions.
- **Transparency:** Transparency remained good in 2014 and was better than the state median. Historical trend analysis indicates relatively stable transparency with moderate variability since monitoring began.
- **Turbidity:** Epilimnetic and tributary turbidities were low with the exception of slightly elevated turbidity in Vickery Pond Inlet. Low flow conditions likely contributed to the slightly elevated turbidity.
- **pH:** Epilimnetic and tributary pH levels were generally less than the desirable range 6.5-8.0 units. Historical trend analysis indicates highly variable epilimnetic pH levels since monitoring began, however epilimnetic pH levels have recovered slightly since 2007. Tributary pH levels have also improved slightly since monitoring began. This is encouraging.
- **Recommended Actions:** Chlorophyll levels (algal growth) have significantly increased (worsened) in recent years and epilimnetic phosphorus levels have also increased although not significantly. While chlorophyll and phosphorus levels remain in a low range, the increase indicates a change in the pond's ecosystem. The increased frequency and intensity of storm events in recent years highlights the importance of reducing impacts from stormwater runoff. Work with Pillsbury State Park staff to install stormwater best practices along roads and campsites to reduce erosion and nutrient transport to the pond. Work with Pillsbury State Park staff to educate campers not to bathe or dump waste water in or near streams that enter the pond or in the pond itself. Encourage Pillsbury State Park to join the Soak Up the Rain NH program for assistance with stormwater projects. Visit www.soaknh.org for more information.



Station Name	Table 1. 2014 Average Water Quality Data for MAY POND							
	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	Total P ug/l	Trans. m		Turb. ntu	pH
					NVS	VS		
Epilimnion	1.1	4.01	11.4	10	4.38	4.55	0.86	5.91
Butterfield Outlet			11.6	7			0.56	6.04
Mill Pd. Inlet			11.7	8			0.40	6.03
Outlet			27.0	7			0.41	6.29
Vickery Pd. Inlet			23.0	11			1.44	6.50

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: > 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: between 6.5-8.0 (unless naturally occurring)

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

Historical Water Quality Trend Analysis

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	Improving	Data significantly decreasing.	Chlorophyll-a	Worsening	Data significantly increasing.
pH (epilimnion)	Stable	Trend not significant; data highly variable.	Transparency	Stable	Trend not significant; data moderately variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data highly variable.